

1. TRANSMITTED DATA

1-1 CHANNEL MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description	ENA
1000 nnnn (8n)	0kkk kkkk (kk)	0100 0000 (40)	Note Off kkk kkkk=24..108 (61Keys+Transpose)	A
1001 nnnn (9n)	0kkk kkkk (kk)	0vvv vvvv (vv)	Note On kkk kkkk=24..108 (61Keys+Transpose) vvv vvvv=1..127	A
1010 nnnn (An)	0kkk kkkk (kk)	0vvv vvvv (vv)	Poly Key Pressure (Recorded Seq Data)	T,Q
1011 nnnn (Bn)	0000 0000 (00)	0mmm mmmm (mm)	Bank Select(MSB) (BANK Key, etc)	*1 P
1011 nnnn (Bn)	0000 0001 (01)	0vvv vvvv (vv)	Modulation 1 (Joystick(+Y))	C
1011 nnnn (Bn)	0000 0010 (02)	0vvv vvvv (vv)	Modulation 2 (Joystick(-Y))	C
1011 nnnn (Bn)	0000 0100 (04)	0000 0000 (00)	Foot Pedal (Select Main Scale)	C
1011 nnnn (Bn)	0000 0100 (04)	0111 1111 (7F)	Foot Pedal (Select Sub Scale)	C
1011 nnnn (Bn)	0000 0111 (07)	0vvv vvvv (vv)	Volume (Assign Pedal, etc)	C
1011 nnnn (Bn)	0000 1010 (0A)	0vvv vvvv (vv)	Panpot (by A:B Panpot)	C
1011 gggg (Bg)	0000 1100 (0C)	0vvv vvvv (vv)	Effect Control (Assignable Pedal)	C
1011 nnnn (Bn)	0010 0000 (20)	0111 1111 (11)	Bank Select(LSB) (BANK Key, etc)	*1 P
1011 nnnn (Bn)	0100 0000 (40)	0000 0000 (00)	Hold 1 Off (Damper Pedal)	C
1011 nnnn (Bn)	0100 0000 (40)	0111 1111 (7F)	Hold 1 On (Damper Pedal)	C
1011 nnnn (Bn)	0ccc cccc (cc)	0vvv vvvv (vv)	Control Data (Recorded Seq Data) ccc cccc=00..127	C,Q
1100 nnnn (Cn)	0ppp pppp (pp)	----	Program Change (Prog Change)	*1 P
1101 nnnn (Dn)	0vvv vvvv (vv)	----	Channel Pressure (Aftertouch)	T
1110 nnnn (En)	0bbb bbbb (bb)	0bbb bbbb (bb)	Pitch Bend (Joystick(X))	C

nnnn : MIDI Channel Number(0-15) Usually Global Channel. When using sequencer, each track's channel.

gggg : Always Global Channel Number(0-15)

vvvv : Value

ENA = A : Always Enabled

C : Enabled when Control Filter in GLOBAL Mode is ENA

P : Enabled when Program Filter in GLOBAL Mode is ENA

T : Enabled when Aftertouch Filter in GLOBAL Mode is ENA

Q : Enabled when sequencer is playing (transmitting) or recording (receiving)

T,Q: T and Q

C,Q: C and Q

*1 : Program : MIDI Out (Hex)

A11..A88: mm,ll,pp = 38,00,00..3F

B11..B88: mm,ll,pp = 38,00,40..7F

C11..C88: mm,ll,pp = 00,01,00..3F

U11..U88: mm,ll,pp = 00,01,40..7F

D11..D88: mm,ll,pp = 00,03,00..3F

E11..E88: mm,ll,pp = 00,03,40..7F

Dr11 : mm,ll,pp = 3E,00,00

Dr12 : mm,ll,pp = 3E,00,10

Dr13 : mm,ll,pp = 3E,00,19

Dr14 : mm,ll,pp = 3E,00,20

Dr15 : mm,ll,pp = 3E,00,28

Dr16 : mm,ll,pp = 3E,00,40

Dr17 : mm,ll,pp = 3E,00,18

Dr18 : mm,ll,pp = 3E,00,30

Dr21..28: mm,ll,pp = 3E,00,78..7F

1-2 SYSTEM COMMON MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description
1111 0010 (F2)	0sss ssss (ss)	0ttt tttt (tt)	Song Position Pointer sss ssss : Least significant (LSB) *2 ttt tttt : Most significant (MSB) *2
1111 0011 (F3)	0000 ssss (ss)	----	Song Select sss : Song No. = 0..9

Transmitted when in Song mode (Internal Clock)

When the number is changed, the i2/i3 transmits [Song Select], then [Bank Select], [Program Change], [Volume], and [Panpot] for each track whose Status = EXT or BOTH. Then [Song Position Pointer].

*2 : For Example Time Signature = 4/4, 8/8
tt,ss = 00,10 / Measure

1-3 SYSTEM REALTIME MESSAGES

Status (Hex)	Description	
1111 1000 (F8)	Timing Clock	*3
1111 1010 (FA)	Start	*3
1111 1011 (FB)	Continue	*3
1111 1100 (FC)	Stop	*3
1111 1110 (FE)	Active Sensing	

*3 : Transmits when in Song or Backing Sequence mode (Internal Clock)

1-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (DEVICE INQUIRY REPLY)

Byte (Hex)	Description
1111 0000 (F0)	Exclusive Status
0111 1110 (7E)	Non Realtime Message
0000 gggg (0g)	MIDI Global Channel (Device ID)
0000 0110 (06)	Inquiry Message
0000 0010 (02)	Identity Reply
0100 0010 (42)	KORG ID (Manufactures ID)
0011 1001 (39)	i-series ID (Family Code LSB)
0000 0000 (00)	(Family Code MSB)
0000 0100 (04)	(Member Code LSB)
0000 0000 (00)	(Member Code MSB)
0*** **** (**)	Firmware Number (Minor Version LSB)
0000 0000 (00)	(Minor Version MSB)
0*** **** (**)	Specification Number (Major Version LSB)
0000 0000 (00)	(Major Version MSB)
1111 0111 (F7)	END OF EXCLUSIVE

Transmits when INQUIRY MESSAGE REQUEST Received

1-5 STRUCTURE OF KORG SYSTEM EXCLUSIVE MESSAGES

1st Byte = 1111 0000 (F0) : Exclusive Status	SysEx Header
2nd Byte = 0100 0010 (42) : KORG ID	
3rd Byte = 0011 gggg (3g) : Format ID g:Global ch.	
4th Byte = 0011 1100 (39 or 3C) : i Series ID	
5th Byte = 0fff ffff (ff) : Function Code (See Func Code List)	
6th Byte = 0ddd dddd (dd) : Data	
:	
LastByte = 1111 0111 (F7) : End of Exclusive EOX	

1-6 Transmitted Function Code List

Func	Description	R	D	E	C
42	MODE DATA	o			
4E	MODE CHANGE				o *4
53	DRUM KIT PARAMETER CHANGE				o *5
4C	ALL PROGRAM PARAMETER DUMP	o			
64	ALL ARRANGEMENT PARAMETER DUMP	o	o		
65	ALL STYLE DATA DUMP	o			
66	ALL BACKING SEQUENCE DATA DUMP	o	o		
51	GLOBAL DATA DUMP	o	o		
52	DRUMS DATA DUMP	o	o		
50	ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ)DUMP	o	o		
26	RECEIVED MESSAGE FORMAT ERROR	o		o	
23	DATA LOAD COMPLETED (ACK)			o	
24	DATA LOAD ERROR (NAK)			o	
67	CHORD				

Transmitted when

R : Request message is received

D : Data dump from Global mode (Doesn't respond to Exclusive ENA,DIS)

E : Exclusive message is received

C : Mode or number is changed by switch

Some Request Messages are not received in some modes. See 2-6.

* When transmitting a series of exclusive messages to the i2/i3, wait until [DATA LOAD COMPLETED] or [WRITE COMPLETED] is received.

*4 : Transmitted when Mode is changed.

*5 : Transmitted when editing drum kit's parameters in GLOBAL mode.

2. RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description	ENA
1000 nnnn (8n)	0kkk kkkk (kk)	0xxx xxxx (xx)	Note Off	A
1001 nnnn (9n)	0kkk kkkk (kk)	0000 0000 (00)	Note Off	A
1001 nnnn (9n)	0kkk kkkk (kk)	0vvv vvvv (vv)	Note On	A
			vvv vvvv=1..127	
1010 nnnn (An)	0kkk kkkk (kk)	0vvv vvvv (vv)	Poly Key Pressure (For Seq.Recording)	T,Q
1011 nnnn (Bn)	0000 0000 (00)	0mmm mmmm (mm)	Bank Select(MSB)	*1 P
1011 nnnn (Bn)	0000 0001 (01)	0vvv vvvv (vv)	Modulation1 Depth (Pitch Modulation)	C
1011 nnnn (Bn)	0000 0010 (02)	0vvv vvvv (vv)	Modulation2 Depth (Cutoff Modulation)	C
1011 nnnn (Bn)	0000 0100 (04)	00vv vvvv(<40)	Foot Pedal Off (Select Main Scale)	C
1011 nnnn (Bn)	0000 0100 (04)	01vv vvvv(>3F)	Foot Pedal On (Select Sub Scale)	C
1011 nnnn (Bn)	0000 0110 (06)	0vvv vvvv (vv)	Data Entry (MSB) (For RPN Edit)	C
1011 nnnn (Bn)	0000 0111 (07)	0vvv vvvv (vv)	Volume	C
1011 nnnn (Bn)	0000 1010 (0A)	0vvv vvvv (vv)	Panpot (A:B Panpot)	C
1011 nnnn (Bn)	0000 1011 (0B)	0vvv vvvv (vv)	Expression	C
1011 gggg (Bg)	0000 1100 (0C)	0vvv vvvv (vv)	Effect Control	C
1011 nnnn (Bn)	0010 0000 (20)	0111 1111 (11)	Bank Select(LSB)	*1 P
1011 nnnn (Bn)	0010 0110 (26)	0vvv vvvv (vv)	Data Entry (LSB) (For RPN Edit)	C
1011 nnnn (Bn)	0100 0000 (40)	00xx xxxx(<40)	Hold1 Off (Damper Off)	C
1011 nnnn (Bn)	0100 0000 (40)	01xx xxxx(>3F)	Hold1 On (Damper On)	C
1011 nnnn (Bn)	0100 1000 (48)	0vvv vvvv (vv)	Release Time (Perf. Edit Release Time) *4	C
1011 nnnn (Bn)	0100 1000 (49)	0vvv vvvv (vv)	Attack Time (Perf. Edit Attack Time) *4	C
1011 nnnn (Bn)	0100 1000 (4A)	0vvv vvvv (vv)	Brightness (Perf. Edit Cutoff) *4	C
1011 nnnn (Bn)	0101 1011 (5B)	0vvv vvvv (vv)	Reverb Level (Send C Level)	C
1011 gggg (Bg)	0101 1100 (5C)	0000 0000 (00)	Effect1 Level (Effect1 Off)	C
1011 gggg (Bg)	0101 1100 (5C)	0xxx xxxx(>00)	Effect1 Level (Effect1 On)	C
1011 nnnn (Bn)	0101 1101 (5D)	0vvv vvvv (vv)	Chorus Level (Send D Level)	C
1011 gggg (Bg)	0101 1110 (5E)	0000 0000 (00)	Effect2 Level (Effect2 Off)	C
1011 gggg (Bg)	0101 1110 (5E)	0xxx xxxx(>00)	Effect2 Level (Effect2 On)	C
1011 nnnn (Bn)	0110 0000 (60)	0000 0000 (00)	DATA Increment (For RPN Edit)	C
1011 nnnn (Bn)	0110 0001 (61)	0000 0000 (00)	DATA Decrement (For RPN Edit)	C
1011 nnnn (Bn)	0110 0100 (64)	0000 00rr (0r)	RPN Parameter Number (LSB)	*3 A
1011 nnnn (Bn)	0110 0101 (65)	0000 0000 (00)	RPN Parameter Number (MSB)	*3 A
1011 nnnn (Bn)	0111 1000 (78)	0000 0000 (00)	All Sound Off	C
1011 nnnn (Bn)	0111 1001 (79)	0000 0000 (00)	Reset All Controllers	C
1011 nnnn (Bn)	0ccc cccc (cc)	0vvv vvvv (vv)	Control Data (For Seq.Recording)	C,Q
			ccc cccc=00..127	
1011 gggg (Bg)	0111 1010 (7A)	0000 0000 (00)	Local Control Off	A
1011 gggg (Bg)	0111 1010 (7A)	0111 1111 (7F)	Local Control On	A
1011 nnnn (Bn)	0111 1011 (7B)	0000 0000 (00)	All Notes Off	A
1011 nnnn (Bn)	0111 110x (7x)	0000 0000 (00)	Omni Mode Off/On (All Notes Off)	A
1011 nnnn (Bn)	0111 1110 (7E)	000m mmmm(<11)	Mono Mode On (All Notes Off)	A

			m mmmm=0..16		
1011 nnnn (Bn)	0111 1111 (7F)	0000 0000 (00)	Poly mode On	(All Notes Off)	A
1100 nnnn (Cn)	0ppp pppp (pp)	---- ----	Program Change	(Prog,Comb CHG) *1,*2	P
1101 nnnn (Dn)	0vvv vvvv (vv)	---- ----	Channel Pressure	(Aftertouch)	T
1110 nnnn (En)	0bbb bbbb (bb)	0bbb bbbb (bb)	Bender Change	(Pitch Bend)	C

nnnn : MIDI Channel Number(0-15) Usually Global Channel.

When in SONG Mode, each track's channel.

gggg : Always Global Channel Number(0-15)

x : don't care

ENA : Same as TRANSMITTED DATA

```
*1 :          MIDI In (Hex): Program
mm,ll,pp = 00,00,00..3F : A11..A88
           00,00,40..7F : B11..B88
           00,01,00..3F : C11..C88
           00,01,40..7F : U11..U88
           00,02,00..0F : Dr11
           00,02,10..17 : Dr12
           00,02,18    : Dr17
           00,02,19    : Dr13
           00,02,1A..1F : Dr17
           00,02,20..27 : Dr14
           00,02,28..2F : Dr15
           00,02,30..37 : Dr18
           00,02,38..3F : Dr11
           00,02,40..47 : Dr16
           00,02,48..77 : Dr11
           00,02,78..7F : Dr21..Dr28
           00,03,00..3F : D11..D88
           00,03,40..7F : E11..E88
           38,xx,00..3F : A11..A88
           38,xx,40..7F : B11..B88
           39,xx,00..3F : A11..A88
           39,xx,40..7F : B11..B88
           3A..3D,xx,xx : OFF
           3E,xx,00..0F : Dr11
           3E,xx,10..17 : Dr12
           3E,xx,18    : Dr17
           3E,xx,19    : Dr13
           3E,xx,1A..1F : Dr17
           3E,xx,20..27 : Dr14
           3E,xx,28..2F : Dr15
           3E,xx,30..37 : Dr18
           3E,xx,38..3F : Dr11
           3E,xx,40..47 : Dr16
           3E,xx,48..77 : Dr11
           3E,xx,78..7F : Dr21..Dr28
           3F,xx,xx    : OFF
```

xx : don't care

*2 : After processing (while Exclusive = ENA) transmits exclusive message [DATA LOAD COMPLETED]
or [DATA LOAD ERROR].

*3 : rr = 0 : Pitch Bend Sensitivity
 = 1 : Fine Tune (When Received Ch = Global Ch, Master Tune)
 = 2 : Coarse Tune (Transpose)

*4 : vv < 40: Fast or Dark
 = 40: No change
 > 40: Slow or Bright

2-2 SYSTEM COMMON MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description
1111 0010 (F2)	0sss ssss (ss)	0ttt tttt (tt)	Song Position Pointer
1111 0011 (F3)	000s ssss (ss)	---- ----	Song Select

Received when in SONG mode (External Clock)

2-3 SYSTEM REALTIME MESSAGES

Status (Hex)	Description	
1111 1000 (F8)	Timing Clock	*5
1111 1010 (FA)	Start	*5
1111 1011 (FB)	Continue	*5
1111 1100 (FC)	Stop	*5
1111 1110 (FE)	Active Sensing	

*5 : Received when in SONG mode (External Clock)

2-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

Byte (Hex)	Description	
1111 0000 (F0)	EXCLUSIVE STATUS	
0111 1110 (7E)	NON REALTIME MESSAGE	
0ggg gggg (gg)	MIDI CHANNEL	*6
0000 aaaa (0a)	SUB ID 1	*7
0000 00bb (0b)	SUB ID 2	*7
1111 0111 (F7)	END OF EXCLUSIVE	

*6 : gg = 0..F : Received if Global Channel
 = 7F : Received on any Channel

*7 : a,b = 06,01 : INQUIRY MESSAGE REQUEST
 = 09,01 : GENERAL MIDI MODE ON
 (Received anytime except when Seq playing/recording, or when DATA FILER page is selected)

2-5 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (REALTIME)

Byte (Hex)	Description	
1111 0000 (F0)	EXCLUSIVE STATUS	
0111 1111 (7F)	REALTIME MESSAGE	
0ggg gggg (gg)	MIDI CHANNEL	*6
0000 0100 (04)	SUB ID 1	
0000 00bb (0b)	SUB ID 2	*8
0vvv vvvv (vv)	VALUE(LSB)	*8
0mmm mmmm (mm)	VALUE(MSB)	*8
1111 0111 (F7)	END OF EXCLUSIVE	

*8 : b = 01 : MASTER VOLUME (mm,vv = 00,00..7F,7F : Min..Max)
 = 02 : MASTER BALANCE (mm,vv = 00,00..40,00..7F,7F : L..Center..R)

2-6 SYSTEM EXCLUSIVE MESSAGES

* Not received when Sequencer is playing, recording, or when the DATA FILER page is selected.

Function Code List

Func	Description	G	P	A	O	R
12	MODE REQUEST	o	o	o	o	42
1C	ALL PROGRAM PARAMETER DUMP REQUEST	A	o	o	o	4C
30	ALL ARRANGEMENT PARAMETER DUMP REQUEST	A	o	o	o	64
31	ALL STYLE DATA DUMP REQUEST	A	o	o	o	65
32	ALL BACKING SEQUENCE DATA DUMP REQUEST	A	o	o	o	66
0E	GLOBAL DATA DUMP REQUEST	A	o	o	o	51
0D	DRUMS DATA DUMP REQUEST	A	o	o	o	52
0F	ALL DATA (GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP REQ	A	o	o	o	50
10	PROGRAM PARAMETER DUMP REQUEST		o			40
4C	ALL PROGRAM PARAMETER DUMP	A	o	o	o	23
64	ALL ARRANGEMENT PARAMETER DUMP	A	o	o	o	23
65	ALL STYLE DATA DUMP	A	o	o	o	23
66	ALL BACKING SEQUENCE DATA DUMP	A	o	o	o	23
40	PROGRAM PARAMETER DUMP	A	o			23
51	GLOBAL DATA DUMP	A	o	o	o	23
52	DRUMS DATA DUMP	A	o	o	o	23
50	ALL DATA (GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP	A	o	o	o	23
4E	MODE CHANGE	o	o	o	o	23
60	PARAMETER CHANGE		o	o		23
41	ARRANGEMENT PARAMETER CHANGE			o		23

Received when in

G : Global Mode

(A=Does not respond to Exclusive ENA, DIS on DATA DUMP page)

P : Program Mode

A : Arrangement Mode

O : All Other Mode

R : Reply Function Number

(Transmitted after the message has been received.)

3. MIDI EXCLUSIVE FORMAT (R:Receive, T:Transmit)

See 1-5 'STRUCTURE OF KORG SYSTEM EXCLUSIVE MESSAGES'

(1) MODE REQUEST

R

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0001 0010	MODE REQUEST	12H
1111 0111	EOX	

Receives this message, and transmits Func=42 message.

(2) ALL PROGRAM PARAMETER DUMP REQUEST R

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0001 1100	ALL PROGRAM PARAMETER DUMP REQUEST	1CH
1111 0111	EOX	

Receives this message, and transmits Func=4C or Func=24 message.

(3) ALL ARRANGEMENT PARAMETER DUMP REQUEST R

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0011 0000	ALL ARRANGEMENT PARAMETER DUMP REQUEST	30H
1111 0111	EOX	

Receives this message, and transmits Func=64 or Func=24 message.

(4) ALL STYLE DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0011 0001	ALL STYLE DATA DUMP REQUEST	31H
1111 0111	EOX	

Receives this message, and transmits Func=65 or Func=24 message.

(5) ALL BACKING SEQUENCE DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0011 0010	ALL BACKING SEQUENCE DATA DUMP REQUEST	32H
1111 0111	EOX	

Receives this message, and transmits Func=66 or Func=24 message.

(6) GLOBAL DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0000 1110	GLOBAL DATA DUMP REQUEST	0EH
1111 0111	EOX	

Receives this message, and transmits Func=51 or Func=24 message.

(7) DRUMS DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0000 1101	DRUMS DATA DUMP REQUEST	0DH
1111 0111	EOX	

Receives this message, and transmits Func=52 or Func=24 message.

(8) PROGRAM DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0001 0000	PROGRAM DATA DUMP REQUEST	10H
1111 0111	EOX	

(9) ALL DATA (GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP REQUEST R

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0000 1111	ALL DATA DUMP REQUEST	0FH
1111 0111	EOX	

Receives this message, and transmits Func=50 or Func=24 message.

(10) PROGRAM WRITE REQUEST R

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0001 0001	PROGRAM WRITE REQUEST	11H
0ppp pppp	Write Program Number (0-63:U11-U88, 64-65:Dr17-Dr18)	
1111 0111	EOX	

(11) PROGRAM PARAMETER DUMP R

Byte	Description
F0,42,3g,39(3C)	EXCLUSIVE HEADER
0100 0000	PROGRAM PARAMETER DUMP 40H
0ddd dddd	Data (NOTE 1,2)
:	:
1111 0111	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=10 message, and transmits this message & data.

(12) ALL PROGRAM PARAMETER DUMP R,T

Byte	Description
F0,42,3g,39(3C)	EXCLUSIVE HEADER
0100 1100	ALL PROGRAM PARAMETER DUMP 4CH
0ddd dddd	Data (NOTE 1,3)
:	:
1111 0111	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=1C message, and transmits this message & data.

(13) ALL ARRANGEMENT PARAMETER DUMP R,T

Byte	Description
F0,42,3g,39(3C)	EXCLUSIVE HEADER
0110 0100	ALL ARRANGEMENT PARAMETER DUMP 64H
0ddd dddd	Data (NOTE 1,4)
:	:
1111 0111	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=30 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed

(14) ALL STYLE DATA DUMP R,T

Byte	Description
F0,42,3g,39(3C)	EXCLUSIVE HEADER
0110 0101	ALL STYLE DATA DUMP 65H
0ddd dddd	Style Header (NOTE 1,5-1)
:	:
0ddd dddd	Style Data (NOTE 1,5-2)
:	:
1111 0111	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=31 message, and transmits this message & data.

(15) ALL BACKING SEQUENCE DATA DUMP R,T

Byte	Description
F0,42,3g,39(3C)	EXCLUSIVE HEADER
0110 0110	ALL BACKING SEQUENCE DATA DUMP 66H
0sss ssss	Backing Sequence Data Size (NOTE 7-1)
:	:
0ddd dddd	Control Data (NOTE 1,7-2)
:	:
0ddd dddd	Backing Sequence Data (NOTE 1,7-3)
:	:
1111 0111	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=32 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(16) GLOBAL DATA DUMP R,T

Byte	Description
F0,42,3g,39(3C)	EXCLUSIVE HEADER
0101 0001	GLOBAL DATA DUMP 51H
0ddd dddd	Data (NOTE 1,8)
:	:
1111 0111	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=0E message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(17) DRUMS DATA DUMP R,T

Byte	Description
------	-------------

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0101 0010	DRUMS DATA DUMP	52H
0ddd dddd	Data	(NOTE 1,9)
:	:	
1111 0111	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
 Receives Func=0D message, and transmits this message & data.
 Transmits this message & data when DATA DUMP is executed.

(18) ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP R,T

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0101 0000	ALL DATA DUMP	50H
0sss ssss	i2/i3 Sequence Data Size	(NOTE 6-1)
:	:	
0sss ssss	Backing Sequence Data Size	(NOTE 7-1)
:	:	
0ddd dddd	Data	(NOTE 1,10)
:	:	
1111 0111	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
 Receives Func=0F message, and transmits this message & data.
 Transmits this message & data when DATA DUMP is executed.

(19) MODE CHANGE R,T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0100 1110	MODE CHANGE	4EH
0000 mmmm	Mode Data	(NOTE 11)
1111 0111	EOX	

Receives this message & data, changes the Mode, and transmits Func=23 or Func=24.
 When the mode is changed by switch, this message & data is transmitted.

(20) ARRANGEMENT PARAMETER CHANGE R

Byte	Description	
F0,42,3g,3C	EXCLUSIVE HEADER	
0100 0001	PARAMETER CHANGE	41H
0ppp pppp	Parameter Number	(TABLE 8)
0vvv vvvv	Value (LSB bit6-0)	(NOTE 12)
0vvv vvvv	Value (MSB bit13-7)	(NOTE 12)
1111 0111	EOX	

(21) PARAMETER CHANGE R

Byte	Description	
F0,42,3g,3C	EXCLUSIVE HEADER	
0110 0000	PARAMETER CHANGE	60H
0ppp pppp	Parameter Page Number	(TABLE 9)
0000 0ppp	Parameter Position Number	(TABLE 9)
0vvv vvvv	Parameter Value (LSB bit6-0)	(NOTE 12)
0vvv vvvv	Parameter Value (MSB bit13-7)	(NOTE 12)
1111 0111	EOX	

(22) MODE DATA T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0100 0010	MODE DATA	42H
0000 mmmm	Mode Data	(NOTE 11)
0000 0000		
1111 0111	EOX	

Receives Func=12 message, and transmits this message & data.

(23) MIDI IN DATA FORMAT ERROR T

Byte	Description	
F0,42,3g,39(3C)	EXCLUSIVE HEADER	
0010 0110	MIDI IN DATA FORMAT ERROR	26H
1111 0111	EOX	

Transmits this message when there is an error in the MIDI IN message (for example, if data length is other than expected).

(24) DATA LOAD COMPLETED (ACK) T

Byte	Description
F0,42,3g,39(3C)	EXCLUSIVE HEADER
0010 0011	DATA LOAD COMPLETED
1111 0111	EOX

Transmits this message when DATA LOADING and PROCESSING have been completed.

(25) DATA LOAD ERROR (NAK) T

Byte	Description
F0,42,3g,39(3C)	EXCLUSIVE HEADER
0010 0100	DATA LOAD ERROR
1111 0111	EOX

Transmits this message when DATA LOADING and PROCESSING have not been completed (for example, if memory is protected).

(26) WRITE COMPLETED T

Byte	Description
F0,42,3g,39(3C)	EXCLUSIVE HEADER
0010 0001	WRITE COMPLETED
1111 0111	EOX

Transmits this message when DATA WRITE via MIDI has been completed.

(27) WRITE ERROR

Byte	Description
F0,42,3g,39(3C)	EXCLUSIVE HEADER
0010 0010	WRITE COMPLETED
1111 0111	EOX

Transmits this message when DATA WRITE via MIDI has not been completed.

(28) CHORD T

Byte	Description
F0,42,3g,39	EXCLUSIVE HEADER
0110 0111	CHORD 67H
0000 rrrr	Root (C=0)
0000 bbbb	Bass (C=0)
0ccc cccc	Chord type (LSB) (NOTE 15)
000c cccc	Chord type (MSB) (NOTE 15)
0ttt tttt	Tension note(s) (LSB) (NOTE 16)
000t tttt	Tension note(s) (MSB) (NOTE 16)
1111 0111	EOX

NOTE 1 :

DUMP DATA CONVERT n=0.. for NOTE 2, 3, 4, 5-1, 5-2, 6-2, 6-3, 7-2, 7-3, 8, 9, 10

DATA (1set = 8bit x 7Byte)

b7	b0	b7	b0	b7	b0	b7	b0
+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+
+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+
7n+0	7n+1	7n+2	..	7n+5		7n+6	

MIDI DATA (1set = 7bit x 8Byte)

b7b7b7b7b7b7b7	b6	b0	b6	b0	b6	b0
+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+
0			0			0
+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+	+--+--+--+--+--+
7n+6,5,4,3,2,1,0	7n+0	7n+1	..	7n+5		7n+6

NOTE 2 : PROGRAM PARAMETER DUMP FORMAT (See TABLE 1, NOTE 1)
 [Parameter No.00], .. , [Parameter No.163]
 164Byte = $7 \times 23 + 3 \rightarrow 8 \times 23 + (1 + 3) = 188 \text{Byte}$

NOTE 3 : ALL PROGRAM PARAMETER DUMP FORMAT (See TABLE 1, NOTE 2)

[Prog.D11(164Byte)], . . , [Prog.D88(164Byte)],
[Prog.Dr7(164Byte)], [Prog.Dr8(164Byte)]
164x(64+2)Byte = 7x1546+2 -> 8x1546+(1+2) = 12371Byte (4.0Sec)

NOTE 4 : ALL ARRANGEMENT PARAMETER DUMP FORMAT (See TABLE 5, NOTE 1)
 [ARR11(131Byte)], .. , [ARR88(131Byte)]
 131x64Byte = 7x1197+5 -> 8x1197+(1+5) = 9582Byte (3.1Sec)

NOTE 5 : ALL STYLE DATA DUMP FORMAT

5-1: Style Header (24Byte) (See TABLE 6-3, NOTE 1)

5-2: Style Data (3328..65496Byte) (See TABLE 6-1, TABLE 6-2, NOTE 1)
 MIN= 24+3328Byte = 7x478+6 -> 8x478+(1+6) = 3831Byte
 MAX= 24+65496Byte = 7x9360+0 -> 8x9360 = 74880Byte (1.2 - 24.0Sec)

NOTE 6 : ALL i2/i3 SONG DATA DUMP FORMAT

- 6-1: Sequence Data Size (2Byte) 4Step(16Byte)/1Size (See 6-3)
 [Data Size (bit6..0)],
 [Data Size (bit13..7)]
- 6-2: Control Data Dump Format (3702Byte) (See TABLE 4-1, NOTE 1)
 [Control Data (Song Size(296) x 10 = 2960Byte)],
 [Pattern Data (200Byte)],
 [Song0-Tr.1 Addr (2Byte)],...,[Song0-Tr.16 Addr],[Song0-Tempo Track Addr],
 [Song1-Tr.1 Addr],...,[Song9-Tr.16 Addr],[Song9-Tempo Track Addr] (340Byte),
 [Pattern0 Addr (2Byte)],...,[Pattern99 Addr] (200Byte),
 [Pattern End Addr(2Byte)]
- 6-3: Sequence Data Dump Format (See TABLE 4-2, NOTE 1)
 [Sequence 1st Data(4Byte)],...,[Seq.nth Data]
 +-----+
 n : Seq.Data Step = 0 .. 40000
 3702Byte+4x[Seq.Data Step]Byte = 7xA+B -> 8xA+(1+B)Byte
 6-1,6-2,6-3 = 2+8xA+(1+B)Byte (1.3 - 58.5Sec)

NOTE 7 : ALL BACKING SEQUENCE DATA DUMP FORMAT

- 7-1: Backing Sequence Data Size (2Byte) 4Step(16Byte)/1Size (See 7-3)
 [Data Size (bit6..0)],
 [Data Size (bit13..7)]
- 7-2: Control Data Dump Format (2292Byte) (See TABLE 7-1, NOTE 1)
 [Control Data (BSQ Size(195) x 10 = 1950Byte)],
 [BSQ0-Tr.1 Addr (2Byte)], .. ,[BSQ0-Tr.16 Addr],[BSQ0-Tempo Track Addr],
 [BSQ1-Tr.1 Addr], .. ,[BSQ9-Tr.16 Addr],[BSQ9-Tempo Track Addr] (340Byte),
 [End Addr (2Byte)]
- 7-3: Backing Sequence Data Dump Format (See TABLE 7-2, NOTE 1)
 [B.Sequence 1st Data(4Byte)], .. ,[BSQ nth Data]
 +-----+
 n : BSQ Data Step = 0 - 40000
 2292Byte+4x[BSQ Data Step]Byte = 7xA+B -> 8xA+(1+B)Byte
 7-1,7-2,7-3 = 2+8xA+(1+B)Byte (0.8 - 58.0Sec)

NOTE 8 : GLOBAL DATA DUMP FORMAT (See TABLE 2, NOTE 1)
 [Global Data (28Byte)]
 28 = 7x4+0 -> 8x4 = 32Byte

NOTE 9 : DRUMS DATA DUMP FORMAT (See TABLE 3, NOTE 1)
 [Drum Kit Data (7x60x2Byte)]
 840Byte = 7x120+0 -> 8x120 = 960Byte (0.3Sec)

NOTE 10 : ALL DATA (GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP FORMAT (See NOTE 1)
 [Global Data], (See NOTE 8)
 [Drums Data], (See NOTE 9)
 [All Program Parameters], (See NOTE 3)
 [All Arrangement Parameters], (See NOTE 4)
 [All Style Data], (See NOTE 5)
 [All i2/i3 SONG Data] (See NOTE 6-2, 6-3)
 [All Backing Sequence Data] (See NOTE 7-2, 7-3)
 28+840+10824+8384+sty+3702+4x[Seq.Data Step]Byte+2292+4x[BSQ Data Step]
 = 7xC+D -> 8xC+(1+D)Byte (10.5..90.0Sec)

NOTE 11 : mmmm = 4 : GLOBAL 6 : SONG
 10 : ARRANGEMENT 11 : BACKING SEQUENCE

NOTE 12 : VALUE DATA FORMAT (Use with PARAMETER CHANGE,DRUM KIT PARAMETER CHANGE)

Bit15-13 of Value Data is the Sign Flag, and each bit has the same value
 Value Data SSSHHHHH LLLLLLLL (S=Sign H,L=13bit data)
 MIDI Data OSHHHHHL OLLLLLLL

NOTE 13 : kk = 00: Drum Kit 1
 01: Drum Kit 2

NOTE 14 : CHORD TYPE

Type	MSB	LSB
No Chord	0000 0000	0000 0000
dim	0000 0000	0100 1001
sus2	0000 0001	0000 0101
m	0000 0001	0000 1001
major	0000 0001	0001 0001
sus4	0000 0001	0010 0001
aug	0000 0010	0001 0001
m6	0000 0101	0000 1001
6	0000 0101	0001 0001
m7b5	0000 1000	0100 1001
7b5	0000 1000	0101 0001
m7	0000 1001	0000 1001

7	0000 1001	0001 0001
7sus4	0000 1001	0010 0001
aug7	0000 1010	0001 0001
dimM7	0001 0000	0100 1001
M7b5	0001 0000	0101 0001
mM7	0001 0001	0000 1001
M7	0001 0001	0001 0001
M7sus4	0001 0001	0010 0001
augM7	0001 0010	0001 0001

NOTE 15 : TENSION NOTE(S)

Tension	MSB	LSB
b9	0000 0000	0000 0010
9	0000 0000	0000 0100
#9	0000 0000	0000 1000
11	0000 0000	0010 0000
#11	0000 0000	0100 0000
b13	0000 0010	0000 0000
13	0000 0100	0000 0000

PROGRAM PARAMETERS (TABLE 1)

No.	PARAMETER	DATA(Hex) : VALUE	VDF-1
00	PROGRAM NAME (Head)	20..7F : ' '..<-'	50 CUTOFF VALUE 00..63 : 00..99
:	:	:	51 KBD TRACK KEY 00..7F : C-1..G9
09	PROGRAM NAME (Tail)		52 CUTOFF KBD TRACK 9D..63 : -99..99
	OSCILLATOR		53 EG INTENSITY 00..63 : 00..99
10	OSCILLATOR MODE	0,1,2 *1	54 EG TIME KBD TRACK 00..63 : 00..99
	ASSIGN	bit0=0:POL, =1:MON	55 EG TIME VEL.SENSE 00..63 : 00..99
11	HOLD	bit1=0:OFF, =1:ON	56 EG INT.VEL.SENSE 9D..63 : -99..99
12	OSC-1 M/D.SOUND(LSB)	0..???? : 0..????	VDF-1 EG
13	OSC-1 M/D.SOUND(MSB)	*14	57 ATTACK TIME 00..63 : 00..99
14	OSC-1 OCTAVE	FE..01 : 32'..4'	58 ATTACK LEVEL 9D..63 : -99..99
15	OSC-2 M/D.SOUND(LSB)	0..???? : 0..????	59 DECAY TIME 00..63 : 00..99
16	OSC-2 M/D.SOUND(MSB)	*14	60 BREAK POINT 9D..63 : -99..99
17	OSC-2 OCTAVE	FE..01 : 32'..4'	61 SLOPE TIME 00..63 : 00..99
18	INTERVAL	F4..0C : -12..12	62 SUSTAIN LEVEL 9D..63 : -99..99
19	DETUNE	CE..32 : -50..50	63 RELEASE TIME 00..63 : 00..99
20	DELAY START	00..63 : 00..99	64 RELEASE LEVEL 9D..63 : -99..99
	PITCH EG		VDA-1
21	START LEVEL	9D..63 : -99..99	65 OSCILLATOR LEVEL 00..63 : 00..99
22	ATTACK TIME	00..63 : 00..99	66 KBD TRACK KEY 00..7F : C-1..G9
23	ATTACK LEVEL	9D..63 : -99..99	67 AMP. KBD TRACK INT. 9D..63 : -99..99
24	DECAY TIME	00..63 : 00..99	68 AMP. VELOCITY SENSE 9D..63 : -99..99
25	RELEASE TIME	00..63 : 00..99	69 EG TIME KBD TRACK 00..63 : 00..99
26	RELEASE LEVEL	9D..63 : -99..99	70 EG TIME VEL.SENSE 00..63 : 00..99
27	TIME VELOCITY SENSE	9D..63 : -99..99	VDA-1 EG
28	LEVEL VELOCITY SENSE	9D..63 : -99..99	71 ATTACK TIME 00..63 : 00..99
	CUTOFF MG		72 ATTACK LEVEL 00..63 : 00..99
	WAVEFORM	bit0..2 : 0..5 *2	73 DECAY TIME 00..63 : 00..99
29	OSC-1 MG ENABLE	bit5=0:OFF, =1:ON	74 BREAK POINT 00..63 : 00..99
	OSC-2 MG ENABLE	bit6=0:OFF, =1:ON	75 SLOPE TIME 00..63 : 00..99
	KEY SYNC	bit7=0:OFF, =1:ON	76 SUSTAIN LEVEL 00..63 : 00..99
30	FREQUENCY	00..63 : 00..99	77 RELEASE TIME 00..63 : 00..99

31	DELAY	00..63 : 00..99	OSC-1 EG TIME KBD TRACK, VEL. SW & POLARITY	
32	INTENSITY	00..63 : 00..99	78 F.EG TIME K.T SW&POL	bit0..7 *3
	AFTERTOUCH		79 F.EG TIME VEL.SW&POL	bit0..7 *3
33	PITCH BEND RANGE	F4..0C : -12..12	80 A.EG TIME K.T SW&POL	bit0..7 *3
34	VDF CUTOFF	9D..63 : -99..99	81 A.EG TIME VEL.SW&POL	bit0..7 *3
35	VDF MG INT	00..63 : 00..99	OSC-1 SEND	
36	VDA AMPLITUDE	9D..63 : -99..99	82 D SEND LEVEL	bit0..3 : 0..9
	JOYSTICK		C SEND LEVEL	bit4..7 : 0..9
37	PITCH BEND RANGE	F4..0C : -12..12	COLOR-1	
38	VDF SWEEP INT.	9D..63 : -99..99	83 INTENSITY	00..63 : 00..99
39	VDF MG INT.	00..63 : 00..99	84 VELOCITY SENSE	9D..63 : -99..99
	OSC-1 PITCH EG		VDF-1, VDA-1 KBD TRACK MODE	
40	PITCH EG INT	9D..63 : -99..99	85 F-1, A-1 KBD TRACK MODE	*4
	OSC-1 PITCH MG		OSC-1 PANPOT	
41	WAVEFORM	bit0..2 : 0..5 *2	86 A:B PAN	00..1E,FF *5
	KEY SYNC	bit7=0:OFF, =1:ON	OSC-2 PARAMETER	
42	FREQUENCY	00..63 : 00..99	87	SAME AS OSC-1(40..86)
43	DELAY	00..63 : 00..99	:	
44	FADE IN	00..63 : 00..99	133	
45	INTENSITY	00..63 : 00..99	134	(RESERVE) 00
46	FREQ MOD BY KBD TRK	9D..63 : -99..99	EFFECT PARAMETER	
47	INTENSITY MOD BY AT	00..63 : 00..99	135	*20
48	INTENSITY MOD BY JS	00..63 : 00..99	:	
49	FREQ MOD BY AT+JS	00..09 : 0..9	163	

GLOBAL PARAMETERS (TABLE 2)

No.	PARAMETER	DATA(Hex) : VALUE
	GLOBAL PARAMETER	
00	MASTER TUNE	CE..32 : -50..50
01	KEY TRANSPOSE	F4..0C : -12..12
02	DAMPER POLARITY	00 : o, 01 : r
03	ASSIGNABLE PEDAL 1	00..2B *8
04	ASSIGNABLE PEDAL 2	00..2B *8
05	MAIN SCALE TYPE	00..0A *9
06	MAIN SCALE KEY	00..0B : C..B
07	USER SCALE	CE..32 : -50..50
:		
18		
19	VELOCITY CURVE	0..7 : 1..8
20	AFTER TOUCH CURVE	0..7 : 1..8
21	SUB SCALE TYPE	00..0A *9
22	SUB SCALE KEY	00..0B : C..B
23	RESERVE	00
:		
27		

*1 : 0 : SINGLE
1 : DOUBLE
2 : DRUMS

*2 : 0 : TRIANGLE
1 : UP SAW
2 : DOWN SAW
3 : SQUARE1
4 : RANDOM
5 : SQUARE2

*3 : bit0 : ATTACK TIME SW =0:OFF, =1:ON
bit1 : DECAY TIME SW =0:OFF, =1:ON
bit2 : SLOPE TIME SW =0:OFF, =1:ON
bit3 : RELEASE TIME SW =0:OFF, =1:ON
bit4 : ATTACK TIME POLARITY =0:+, =1:-
bit5 : DECAY TIME POLARITY =0:+, =1:-
bit6 : SLOPE TIME POLARITY =0:+, =1:-
bit7 : RELEASE TIME POLARITY =0:+, =1:-

DRUM PARAMETERS (TABLE 3)

No.	PARAMETER	DATA(Hex) : VALUE
-----	-----------	-------------------

*4 : bit0,1 .. VDF
0 : OFF
1 : LOW

DRUM KIT 1-INDEX #0		
00	INST NO.	00:OFF, 01..:INT
01	KEY	0C..73 : C0..G8
02	A:B PAN	bit0..4 *10
	EXCLUSIVE ASSIGN	bit5..7 *10
03	TUNE	88..78 :-120..120
04	LEVEL	9D..63 : -99..99
05	DECAY	9D..63 : -99..99
06	D SEND LEVEL	bit0..3: 0..9
	C SEND LEVEL	bit4..7: 0..9
DRUM KIT 1-INDEX #1 .. DRUM KIT 2-#59		
07	SAME AS DRUM KIT 1-#0(00..06)x(60x2-1)	
:		
839		

bit4,5 .. VDA +-- 2 : HIGH
3 : ALL

*5 : 00 : L15
: :
OF : CNT
: :
1E : R15
1F : PRG (When in SONG Mode)
FF : OFF

*6 : A11 ..A88 : 00..3F
B11 ..B88 : 40..7F
Dr11..Dr16: 80..85
C11 ..C88 : 86..C5
U11 ..U88 : 00..3F
Dr17..Dr18: 40..41

*7 : bit0 : PROGRAM CHANGE =0:DIS, =1:ENA
bit1 : DAMPER =0:DIS, =1:ENA
bit2 : AFTERTOUCH =0:DIS, =1:ENA
bit3 : CONTROL CHANGE =0:DIS, =1:ENA

bit7=1 : A11 ..A88
: B11 ..B88
: Dr11..Dr16
: C11 ..C88
=0 : U11 ..U88
: Dr17..Dr18

Program is selected by *6 and *7(bit7)

i Series SEQUENCER CONTROL DATA (TABLE 4-1)

No.	PARAMETER	DATA(Hex) : VALUE	PATTERN 0 PARAMETERS
SONG 0 CONTROL DATA			2960 BEAT *12
00	MIDI Channel(Tr.1)	00..0F : 1..16	2961 LENGTH 01..63 : 1..99
:	:	:	PATTERN 1..99 PARAMETERS
15	MIDI Channel(Tr.16)		2962 SAME AS PATTERN 0(2960,2961) x 99
16	STATUS (Tr.1)	*11	:
:	:	:	3159
31	STATUS (Tr.16)		SONG 0, TRACK 1 DATA ADDRESS
32	BEND RANGE (Tr.1)	00..0C : 00..12	3160 DATA ADDRESS (LSB)
:	:	:	0000 (Start Addr)
47	BEND RANGE (Tr.16)		3161 DATA ADDRESS (MSB)
			SONG 0, TRACK 2 .. TRACK 16 DATA ADDRESS
48	BEAT	*12	3162 SAME AS
49	TEMPO	28..F0 : 40..240	SONG 0, TRACK 1 ADDRESS(3160,3161)
			x 15
50	PROTECT (Tr.1)	bit0=0:OFF, =1:ON	3191
:	:	:	SONG 0, TEMPO TRACK DATA ADDRESS
	PROTECT (Tr.8)	bit7	3192 DATA ADDRESS (LSB)
51	PROTECT (Tr.9)	bit0=0:OFF, =1:ON	3193 DATA ADDRESS (MSB)
:	:	:	SONG 1..9 TRACK DATA ADDRESS
	PROTECT (Tr.16)	bit7	3194 SAME AS SONG 0,
52	NEXT SONG NO.	*13	TRACK ADDRESS (3160..3193) x 9
53	SONG NAME (Head)	20..7F : ' '..<-'	3499
:	:	:	PATTERN 0 DATA ADDRESS
62	SONG NAME (Tail)		3500 DATA ADDRESS (LSB)
63	(RESERVE)	00	3501 DATA ADDRESS (MSB)

64	EFFECT PARAMETER			PATTERN 1 .. PATTERN 99 DATA ADDRESS
:		*20	3502	SAME AS PATTERN 0(3500,3501)
92			:	
	TRACK 1 CONTROL DATA		3699	
93	PROGRAM NO.	*6	3700	End Pattern Addr(L)
94	OUTPUT LEVEL	00..7F : 00..127	3701	End Pattern Addr(H)
95	KEY TRANSPOSE	E8..18 : -24..24		
96	DETUNE	CE..32 : -50..50	i2/i3	SEQUENCE DATA (TABLE 4-2)
97	A:B PAN	00..1E,1F,FF *5	No.	PARAMETER DATA(Hex) : VALUE
	D SEND LEVEL	bit0..3 : 0..9,PRG		SEQUENCE DATA 1
98	C SEND LEVEL	bit4..7 : 0..9,PRG	3702	DATA (1-L) *15
99	KEY WINDOW TOP	00..7F : C-1..G9	3703	DATA (1-H) *15
100	KEY WINDOW BOTTOM	00..7F : C-1..G9	3704	DATA (2-L) *15
101	VEL WINDOW TOP	01..7F : 01..127	3705	DATA (2-H) *15
102	VEL WINDOW BOTTOM	01..7F : 01..127		SEQUENCE DATA 2 ..
103	CONTROL FILTER	*7	3706	SAME AS SEQUENCE DATA 1(3702..3705)
104	MIDI CHANNEL	00..0F : 1..16	:	
	TRACK 2..16 CONTROL DATA			
105	SAME AS TRACK 1(93..104) x 15			
:				
284				
285..290	(RESERVE)	00		
291	METRONOME LEVEL	00..63 : 0..99		
292	METRONOME PAN	00..1E *5		
293	METRONOME LEAD IN	0..2 : 0..2		
294	TEMPO TRACK ON/OFF	0:OFF, 1:ON		
295	(RESERVE)	00		
	SONG 1..9 CONTROL DATA			
296	SAME AS SONG 0 (00..295) x 9			
:				
2959				

*8 : 0 : OFF
 1 : START/STOP
 2 : SYNC START/STOP
 3 : RESET
 4 : INTRO/ENDING 1
 5 : INTRO/ENDING 2
 6 : FILL 1
 7 : FILL 2
 8 : VARIATION 1
 9 : VARIATION 2
 A : VARIATION 3
 B : VARIATION 4
 C : CHORD HOLD
 D : BASS INVERSION
 E : SCALE CHANGE
 F : ARRANGEMENT UP
 10 : ARRANGEMENT DOWN
 11 : PROGRAM UP
 12 : PROGRAM DOWN
 13 : VARIATION UP
 14 : VARIATION DOWN
 15 : PUNCH IN/OUT
 16 : EFFECT 1 ON/OFF
 17 : EFFECT 2 ON/OFF
 18 : DRUM MUTE
 19 : PERC MUTE
 1A : BASS MUTE
 1B : ACC1 MUTE
 1C : ACC2 MUTE
 1D : ACC3 MUTE

1E : KB VOLUME
 1F : EXPRESSION
 20 : VDF CUTOFF
 21 : EFFECT CONTROL
 22 : DATA ENTRY
 23 : Inhibit
 24 : Inhibit
 25 : KBD LOCK
 26 : TAP TEMPO
 27 : SOUND HOLD ON/OFF
 28 : SUSTAIN ON/OFF
 29 : FADE IN/OUT
 2A : ENSEMBLE ON/OFF
 2B : MASTER VOLUME
 2C : QUARTER TONE

*9 : 0 : EQUAL TEMP
 1 : EQUAL TEMP 2
 2 : PURE MAJOR
 3 : PURE MINOR
 4 : ARABIC
 5 : PYTHAGOREAN
 6 : WERKMEISTER
 7 : KIRNBERGER
 8 : SLENDRO
 9 : PELOG
 A : USER SCALE

*10 : bit0..4 = 00 : L15
 : :
 0F : CNT
 : :
 1E : R15
 1F : OFF

bit5..7 = 0 : EX Off
 1 : EX Group1
 : :
 6 : EX Group6
 7 : Self

*11 : bit0,1 = 0 : OFF
 1 : INT
 2 : EXT
 3 : BOTH

bit2,3 = 0 : Play, = 1 : Mute, = 2 : Solo

*12 : bit0..5 10..18 : 1/4 .. 9/4
 20..2F : 1/8 .. 16/8
 30..3F : 1/16 .. 16/16
 bit7 = 0 : High Resolution
 1 : Low Resolution

*13 : bit0..6 = 0 : Song0
 : :
 9 : Song9
 7F : OFF
 bit7 = 0/1 : Auto Start OFF/ON

*14 : When set to Single/Double Mode
 0000 : A.Piano 1
 : :
 0153 : DJ Kit 2
 0154 : A.Piano 3 (i2 only)

When set to Drum Mode
 00 : User Kit 1
 : :
 07 : Percussion

*15 : SEQUENCE DATA FORMAT

*15-1 NOTE ON/OFF

DATA(1-H)	DATA(1-L)	DATA(2-H)	DATA(2-L)
1vvv vvv t	tttt tttt	kkkk kkk g	gggg gggg
Velocity Event Time Key No. Length			

t = 30: quarter note, 1FE : Tie from previous bar
 g = 30: quarter note, 1FE : Tie to next bar

*15-2 PITCH BEND

Event Time	Value(H)	Value(L)
0001 000 t	tttt tttt	0 vvv vvvv

*15-3 AFTER TOUCH

Event Time	Value
0010 000 t	tttt tttt 0000 0000 0 vvv vvvv

*15-4 PROGRAM CHANGE

Event Time	Bank	Program No.
0011 000 t	tttt tttt 0000 00bb	0ppp pppp

b = 00..02 p = 00..7F

*15-5 CONTROL CHANGE

Event Time	Value	Control No.
0100 000 t	tttt tttt 0vvv vvvv	0ccc cccc

c = 00..65 : Same as MIDI Control Change
 = 66 : Assignable Pedal

*15-6 POLY KEY PRESSURE

Event Time	Value	Key No.
0101 000 t	tttt tttt 0 vvv vvvv	0 kkk kkkk

*15-7 BAR

Bar No.	Type	Beat	Pattern No.
0110 00bb	bbbb bbbb	xx ss ssss	0ppp pppp

x = 00 : Pattern not used
 = 10 : Pattern continued
 = 11 : Pattern start

ARRANGEMENT PARAMETERS (TABLE 5)

No.	PARAMETER	DATA(Hex) : VALUE	ACC 1..3 PARAMETERS
00	ARRANGE NAME (Head)	20..7F : ' ' < - '	58 SAME AS DRUMS
09	ARRANGE NAME (Tail)		81
10	SYTLE NO.	00..37 : 11..68	KBD 1..2 PARAMETERS
11		: 71..84	82 SAME AS DRUMS

12	INITIAL VARIATION	00..03 : VAR 1..4	:	
13			97	
14	INITIAL TEMPO	0A..D2 : 40..240		KBD1 VELOCITY WINDOW
15	KEYBOARD ASSIGN	00..03 : *16	98	TOP 01..7F : 1..127
16	SPLIT POINT	24..60 : C2..C7	99	BOTTOM 01..7F : 1..127
17	OCTAVE	FE..02 : -2..+2		KBD2 VELOCITY WINDOW
18	TRANPOSE	F5..0B : -C#..+B	100	TOP 01..7F : 1..127
19	MANUAL DRUM KIT	00..07 : Dr1..Dr8		
	SWITCHES		101	BOTTOM 01..7F : 1..127
20	DYNAMIC VELOCITY	bit0=0:OFF, =1:ON	102	EFFECT PARAMETERS *20
	TEMPO LOCK	bit1=0:OFF, =1:ON	:	
	KBD1 DAMPER ENABLE	bit2=0:OFF, =1:ON	130	
	KBD2 DAMPER ENABLE	bit3=0:OFF, =1:ON		
	CHORD SCANNING TYPE		*16	00 : SINGLE 01 : LAYER 02 : SPLIT 03 : M.DRUMS
21	CHORD SCAN LOW	bit0=0:OFF, =1:ON		
	CHORD SCAN HIGH	bit1=0:OFF, =1:ON		
	BASS INVERSION	bit2=0:OFF, =1:ON		
	CHORD HOLD	bit3=0:OFF, =1:ON		
	CHORD LATCH	bit4=0:OFF, =1:ON	*17	BANK = 00, PROG = 00..7F : A11..A88..B88 = 01, = 00..7F : C11..C88..U88 = 02, = 00..0F : Dr11..Dr28 = 03, = 00..7F : D11..E88
22	DEFAULT DRUM MAPPING	00..07 : Dr1..Dr8		
:				
25				
26	RESERVE	00		
:				
29				
30	FILL1	00..0C :OFF..DOWN		
31				
32	FILL2	00..0C :OFF..DOWN		
33				
	DRUM PARAMETERS			
34	PROG		*17	
35	BANK			
36	VOL	00..7F : 0..127		
37	PAN		*5	
38	C SEND LEVEL	bit0..3 : 0..9,PRG		
	D SEND LEVEL	bit4..7 : 0..9,PRG		
39	OCTAVE	FE..02 : -2..+2		
40	OUT STATUS		*11	
41	WRAP-AROUND	FF..0B : STY..11		
	PERCUSSION PARAMETERS			
42	SAME AS DRUMS			
:				
49				
	BASS PARAMETERS			
50	SAME AS DRUMS			
:				
57				

STYLE CONTROL DATA (TABLE 6-1)

No.	PARAMETER	DATA(Hex) : VALUE	INTRO1 CHORD VARIATION1 PARAMETERS
-----	-----------	-------------------	------------------------------------

00	STYLE NAME (Head)	20..7F : ' '..<-'	110	KEY	*18
:	:	:	111	LENGTH	00..10 : 0..16
09	STYLE NAME (Tail)		INTRO1 CHORD VARIATION2 PARAMETERS		
10	SYTLE TYPE	0.USER CREATED	112	KEY	*18
		1.BUILT-IN	113	LENGTH	00..10 : 0..16
		2.CARD OR DISK	INTRO2 PARAMETERS		
11	TEMPO	0A..D2 : 40..240	114	SAME AS INTRO1	
12	TIME SIGNATURE	Hi Res only *12	:	117	
NOTE RETRIGGER SWITCH					
13	BASS	bit2=0:OFF, =1:ON	ENDING 1..2 PARAMETERS		
	ACC1	bit3=0:OFF, =1:ON	118	SAME AS INTRO1	
	ACC2	bit4=0:OFF, =1:ON	:		
	ACC3	bit5=0:OFF, =1:ON	125		
NOTE SHIFT UP RANGE			FILL 1..2 PARAMETERS		
14	BASS	00..0B : 0..11	126	SAME AS INTRO1	
15	ACC1	00..0B : 0..11	:	133	
16	ACC2	00..0B : 0..11			
17	ACC3	00..0B : 0..11	VARIATION 1 CHORD VARIATION TABLE		
TENSION AVAILABLE			134	Major	00..05 : 1..6
18	ACC1	bit3=0:OFF, =1:ON	135	M6	00..05 : 1..6
	ACC2	bit4=0:OFF, =1:ON	136	M7	00..05 : 1..6
	ACC3	bit5=0:OFF, =1:ON	137	M7b5	00..05 : 1..6
	19	RESERVE	00	138	sus4
139				sus2	00..05 : 1..6
140				M7sus4	00..05 : 1..6
DRUM PARAMETERS			141	minor	00..05 : 1..6
38	PROG	*17	142	m6	00..05 : 1..6
39	BANK		143	m7	00..05 : 1..6
40	VOL	00..7F : 0..127	144	m7b5	00..05 : 1..6
41	PAN	*5	145	mM7	00..05 : 1..6
PERCUSSION PARAMETTERS			146	7th	00..05 : 1..6
42	SAME AS DRUMS		147	7b5	00..05 : 1..6
			148	7sus4	00..05 : 1..6
			149	dim	00..05 : 1..6
BASS PARAMETERS			150	dimM7	00..05 : 1..6
46	SAME AS DRUMS		151	aug	00..05 : 1..6
			152	aug7	00..05 : 1..6
			153	augM7	00..05 : 1..6
ACC 1..3 PARAMETERS			VARIATION 2..4 CHORD VARIATION TABLE		
50	SAME AS DRUMS		154	SAME AS VARIATION1	
			:		
			213		
VARIATION1, CHORD VARIATION1 PARAMETERS					
62	KEY	*18	*18 : 00 : C MAJOR		
			01 : C MINOR		
63	LENGTH	00..10 : 0..16	02 : C#MAJOR		
			03 : C#MINOR		
VARIATION1 CHORD VARIATION2..6 PARAMETERS			:		
64	SAME AS VARIATION1 CHORD VARIATION1		16 : B MAJOR		
			17 : B MINOR		

:	
73	
VARIATION 2..4 PARAMETERS	
74	SAME AS VARIATION1
:	
109	

INTRO1 CHORD VARIATION TABLE			VARIATION 2..4 DATA ADDRESS		
214	Major	00..01 : 1..2	546	SAME AS VARIATION1 DATA ADDRESS	
215	M6	00..01 : 1..2	:		
216	M7	00..01 : 1..2	581		
217	M7b5	00..01 : 1..2	ENDING 1..2 DATA ADDRESS		
218	sus4	00..01 : 1..2	582	SAME AS VARIATION1 DATA ADDRESS	
219	sus2	00..01 : 1..2	:		
220	M7sus4	00..01 : 1..2	605		
221	minor	00..01 : 1..2	FILL 1..2 DATA ADDRESS		
222	m6	00..01 : 1..2	606	SAME AS VARIATION1 DATA ADDRESS	
223	m7	00..01 : 1..2	:		
224	m7b5	00..01 : 1..2	629		
225	mM7	00..01 : 1..2	PATTERN 0 DATA ADDRESS		
226	7th	00..01 : 1..2	630	DATA ADDRESS (LSB)	
227	7b5	00..01 : 1..2	631	DATA ADDRESS (MSB)	
228	7sus4	00..01 : 1..2	PATTERN 1..99 DATA ADDRESS		
229	dim	00..01 : 1..2	632	SAME AS PATTERN 0	
230	dimM7	00..01 : 1..2	:		
231	aug	00..01 : 1..2	829		
232	aug7	00..01 : 1..2	830	END PATTERN ADDR(L)	
233	augM7	00..01 : 1..2	831	END PATTERN ADDR(M)	
INTRO2 CHORD VARIATION TABLE					
234	SAME AS INTRO1		STYLE DATA (TABLE 6-2)		
:			No.	PARAMETER	DATA(Hex) : VALUE
253			STYLE 1 DATA		
ENDING 1..2 CHORD VARIATION TABLE			0	DATA (1-L)	*15
254	SAME AS INTRO1		1	DATA (1-H)	*15
:			2	DATA (2-L)	*15
293			3	DATA (2-H)	*15
FILL 1..2 CHORD VARIATION TABLE			STYLE 2 DATA ..		
294	SAME AS INTRO1		4	SAME AS STYLE1	
:			:		
333					
PATTERN 0 CONTROL DATA					
334	BEAT	:	*12	STYLE HEADER (TABLE 6-3)	
335	LENGTH	01..63 : 1..99	No.	PARAMETER	DATA(Hex) : VALUE
PATTERN 1..99 CONTROL DATA			STYLE 1		
336	SAME AS PATTERN 0		0	STYLE1 ADDRESS	
:			:		
533			3		
VARIATION1 ACC1 DATA ADDRESS			4	STYLE1 SIZE	
534	DATA ADDRESS (LSB)		5		

535	DATA ADDRESS (MSB)		STYLE 2..4
VARIATION1 ACC 2..3 DATA ADDRESS			6 : 23
536	SAME AS VARIATION1 ACC1 DATA ADDRESS		
:			
539			
VARIATION1 BASS, DRUMS, PERC. DATA ADDRESS			
540	SAME AS VARIATION1 DATA ADDRESS		
:			
545			

BACKING SEQUENCE CONTROL DATA (TABLE 7-1)

No.	PARAMETER	DATA(Hex) : VALUE	EXTRA TRACK 1 CONTROL DATA	
BSEQ 0 CONTROL DATA			46	PROGRAM NUMBER *17
00	BSEQ NAME (Head)	20..7F : ' '..<-'	47	PROGRAM BANK
:	:	:	48	VOLUME 00..7F : 0..127
09	BSEQ NAME (Tail)		49	PANPOT *5
10	ARRANGEMENT NO.	00..3F : 11..88	50	C SEND LEVEL bit0..3 : 0..9,PRG
11				D SEND LEVEL bit4..7 : 0..9,PRG
12	STYLE NO.	00..37 : 11..68	51	TRACK STATUS *11
13		71..84	52	BEND RANGE 00..0C : 00..12
14	VARIATION	00..03 : VAR 1..4	53	KEY TRANSPOSE E8..18 : -24..24
15			54	DETUNE CE..32 : -50..50
16	TEMPO	0A..D2 : 40..240	55	PROTECT : OFF/ON
17	KEYBOARD ASSIGN	*16	56	MIDI CHANNEL 00..0F : 1..16
CHORD SCANNING TYPE			57	VELOCITY WINDOW TOP 01..7F : 1..127
18	CHORD SCAN LOW	bit0=0:OFF, =1:ON	58	VELOCITY WIN. BOTTOM 01..7F : 1..127
	CHORD SCAN HIGH	bit1=0:OFF, =1:ON	59	KEY WINDOW TOP 00..7F : C-1..G9
	BASS INVERSION	bit2=0:OFF, =1:ON	60	KEY WINDOW BOTTOM 00..7F : C-1..G9
	CHORD HOLD	bit3=0:OFF, =1:ON	EXTRA TRACK 2..8 CONTROL DATA	
	CHORD LATCH	bit4=0:OFF, =1:ON	61	SAME AS TRACK 1
19	KBD1 PROGRAM NUMBER	*17	:	
20	KBD1 PROGRAM BANK		165	
21	KBD1 OCTAVE	FE..02 : -2..+2	166	EFFECT PARAMETER *20
22	KBD2 PROGRAM NUMBER	*17	:	
23	KBD2 PROGRAM BANK		194	
24	KBD2 OCTAVE	FE..02 : -2..+2	BSEQ 1..9 CONTROL DATA	
25	KEYBOARD TRK STATUS	*21-1	195	SAME AS BSEQ 0
26	CONTROL TRK STATUS	*21-1	:	
27	CHORD TRK STATUS	*21-1	1949	
28	AUTOTEMPO	0A..D2 : 40..240	BSEQ TRACK1 DATA ADDRESS	
29	BEAT	Hi Res only *12	1950	DATA ADDRESS (LSB)
30	SPLIT POINT	24..60 : C2..C7	1951	DATA ADDRESS (MSB)
31	TRANPOSE	F5..0B :-C#..+B	BSEQ0 TRACK 2..16 DATA ADDRESS	
SWITCHES			1952	SAME AS BSEQ0 TRACK1 DATA ADDRESS
32	DYNAMIC VELOCITY	bit0=0:OFF, =1:ON	:	
33	RESERVE	00	1981	
:			BSEQ0 TEMPO TRACK DATA ADDRESS	
39			1982	SAME AS BSEQ0 TRACK1 DATA ADDRESS

40	METRONOME SWITCH	*21-2	1983	
41	METRONOME LEVEL	00..63 : 0..99	BSEQ	1..9 DATA ADDRESS
42	METRONOME PAN	*5	1984	SAME AS BSEQ0 TRACK DATA ADDRESS
43	METRONOME LEAD-IN	0..2 : 0..2	:	
44	NEXT BSEQ NUMBER	*21-3	2289	
45	AUTO START	*21-4	2290	END ADDRESS (LSB)
			2291	END ADDRESS (MSB)

*21-1 : Track Status

00 : MUTE
01 : PLAY

*21-2 : Metronome Switch

00 : OFF
01 : ON
02 : REC

*21-3 : Next BSeq No.

FF : OFF
00 : BSeq 0
:
09 : BSeq 9

*21-4 : Auto Start

00 : OFF

B.SEQUENCE DATA (TABLE 7-2)

No.	PARAMETER	DATA(Hex) : VALUE
BACKING SEQUENCE DATA 1		
0	DATA (1-L)	*19
1	DATA (1-H)	*19
2	DATA (2-L)	*19
3	DATA (2-H)	*19
BACKING SEQUENCE DATA 2..		
4	SAME AS BACKING SEQUENCE DATA 1 (0..3)	
:		

*19-1-1 : 0..55 : P11..P68, U1..U4, C1..C4

*19-1-2 : 0 : Variation1
:
3 : Variation4
4 : Intro1
5 : Intro2
6 : Ending1
7 : Ending2
8 : Fill1
9 : Fill2

*19 : BACKING SEQUENCE DATA FORMAT

*19-1 : BACKING CONTROL EVENT

DATA(1-H) DATA(1-L) DATA(2-H) DATA(2-L)

10ii	iii t	tttt tttt	vvvv vvvv	vvvv vvvv
EventID	EventTime	Value 2	Value 1	

EventID	Value
0 Arrangement	0..63 11..88
1 Style	0..55 *19-1-1
2 Variation	0..9 *19-1-2
3 Keyboard Assign	0..3 *19-1-3
4 Chord Scan	0..3 *19-1-4
5 Chord Hold	0/1 OFF/ON
6 Bass Inversion	0/1 OFF/ON
7 Transpose	-11..+11
8 Drum Mute	0/1 MUTE/PLAY
9 Perc.Mute	0/1 MUTE/PLAY
10 Bass Mute	0/1 MUTE/PLAY
11 ACC1 Mute	0/1 MUTE/PLAY
12 ACC2 Mute	0/1 MUTE/PLAY
13 ACC3 Mute	0/1 MUTE/PLAY

*19-1-3 : 0 : SINGLE
1 : LAYER
2 : SPLIT
3 : M.DRUM

*19-1-4 : 0 : OFF
1 : LOWER
2 : UPPER
3 : FULL

14	Drum Map	0..7	1..8
15	KBD1 Program	V1=NUMBER	V2 = BANK
16	KBD2 Program	V1=NUMBER	V2 = BANK
17	KBD1 Octave	-2..+2	
18	KBD2 Octave	-2..+2	

*19-2 : CHORD EVENT

llii	iii	t	tttt	tttt	nnnn	nnnn	bbbb	rrrr
------	-----	---	------	------	------	------	------	------

ChordID EventTime TensionNote Bass Root

ChordID = 0 : No Chord

- 1 : Major
- 2 : Major 6th
- 3 : Major 7th
- 4 : Major 7th Flatted 5th
- 5 : Suspended 4th
- 6 : Suspended 2nd
- 7 : Major 7th Suspended 4th
- 8 : Minor
- 9 : Minor 6th
- 10 : Minor 7th
- 11 : Minor 7th Flatted 5th
- 12 : Minor Major 7th
- 13 : Dominant 7th
- 14 : 7th Flatted 5th
- 15 : 7th Suspended 4th
- 16 : Diminished
- 17 : Diminished Major 7th
- 18 : Augmented
- 19 : Augmented 7th
- 20 : Augmented Major 7th

TensionNote = 0000 0001 : Flatted 9th
0000 0010 : 9th
0000 0100 : Sharped 9th
0000 1000 : 11th
0001 0000 : Sharped 11th
0010 0000 : Flatted 13th
0100 0000 : 13th

Bass = 0..11 (C..B)

Root = 0..11 (C..B)

ARRANGEMENT PARAMETERS (TABLE 8)

No.	TRACK	PARAMETER	VALUE
0	----	TEMPO	40..240
1	----	CHORD LATCH	0..1
2	----	SPLIT POINT	0..127
3	----	TRANSPOSE	-11..11
4	----	VARIATION BY FILL 1	0..12
5	----	VARIATION BY FILL 2	0..12
6	----	EFFECT 1 TYPE	0..47
7	----	EFFECT 1 LEVEL	0..100
8	----	EFFECT 2 TYPE	0..47
9	----	EFFECT 2 LEVEL	0..100
10	DRUM	PROGRAM	*1
11	DRUM	VOLUME	0..127
12	DRUM	PANPOT	-1..31
13	DRUM	C LEVEL	0..10
14	DRUM	D LEVEL	0..10
15	DRUM	MUTE	0..1
16	----	----	----

*1 : 0..63 = A11..A88
64..127 = B11..B88
128..191 = C11..C88
192..255 = U11..U88
256..319 = D11..D88
320..383 = E11..E88
384..399 = Dr11..Dr28

17	DRUM	OUTPUT STATUS	0..3
18	----	----	----
19	----	----	----
20	PERC	PROGRAM	*1
21	PERC	VOLUME	0..127
22	PERC	PANPOT	-1..31
23	PERC	C LEVEL	0..10
24	PERC	D LEVEL	0..10
25	PERC	MUTE	0..1
26	----	----	----
27	PERC	OUTPUT STATUS	0..3
28	----	----	----
29	----	----	----
30	BASS	PROGRAM	*1
31	BASS	VOLUME	0..127
32	BASS	PANPOT	-1..31
33	BASS	C LEVEL	0..10
34	BASS	D LEVEL	0..10
35	BASS	MUTE	0..1
36	BASS	OCTAVE	-2..2
37	BASS	OUTPUT STATUS	0..2
38	BASS	WRAP AROUND POINT	-1..11
39	----	----	----
40	ACC1	PROGRAM	*1
41	ACC1	VOLUME	0..127
42	ACC1	PANPOT	-1..31
43	ACC1	C LEVEL	0..10
44	ACC1	D LEVEL	0..10
45	ACC1	MUTE	0..1
46	ACC1	OCTAVE	-2..2
47	ACC1	OUTPUT STATUS	0..3
48	ACC1	WRAP AROUND POINT	-1..11
49	----	----	----
50	ACC2	PROGRAM	*1
51	ACC2	VOLUME	0..127
52	ACC2	PANPOT	-1..31
53	ACC2	C LEVEL	0..10
54	ACC2	D LEVEL	0..10
55	ACC2	MUTE	0..1
56	ACC2	OCTAVE	-2..2
57	ACC2	OUTPUT STATUS	0..3
58	ACC2	WRAP AROUND POINT	-1..11
59	----	----	----
60	ACC3	PROGRAM	*1
61	ACC3	VOLUME	0..127
62	ACC3	PANPOT	-1..31

63	ACC3	C LEVEL	0..10
64	ACC3	D LEVEL	0..10
65	ACC3	MUTE	0..1
66	ACC3	OCTAVE	-2..2
67	ACC3	OUTPUT STATUS	0..3
68	ACC3	WRAP AROUND POINT	-1..11
69	----	----	----
70	KBD1	PROGRAM	*1
71	KBD1	VOLUME	0..127
72	KBD1	PANPOT	-1..31
73	KBD1	C LEVEL	0..10
74	KBD1	D LEVEL	0..10
75	KBD1	MUTE	0..1
76	KBD1	OCTAVE	-2..2
77	----	----	----
78	----	----	----
79	KBD1	DAMPER ENABLE	0..1
80	KBD2	PROGRAM	*1
81	KBD2	VOLUME	0..127
82	KBD2	PANPOT	-1..31
83	KBD2	C LEVEL	0..10
84	KBD2	D LEVEL	0..10
85	KBD2	MUTE	0..1
86	KBD2	OCTAVE	-2..2
87	----	----	----
88	----	----	----
89	KBD2	DAMPER ENABLE	0..1

PROGRAM PAGE AND POSITION TO PARAMETER ADDRESS (TABLE 9)

Example

12-13: 12th byte to 13th byte

14.1-3: bit 1 to bit 3 of 14th byte

15.0/4: bit 0 and bit 4 of 15th byte

PAGE			POSITION							
#	DESCRIPTION	OSC	0	1	2	3	4	5	6	7
1	OSC BASIC	-	10	11.0	11.0	18	19	20	-	-
2	OSC TONE	1	OSC	12-13	65	14	40	86	-	-
2	OSC TONE	2	OSC	15-16	112	17	87	133	-	-
3	PITCH EG	-	21	22	23	24	25	26	28	27
4	VDF/SEND	1	OSC	50	53	83	82.0-3	82.4-7	129.0-3	129.4-7
4	VDF/SEND	2	OSC	97	100	130	82.0-3	82.4-7	129.0-3	129.4-7
5	VDF EG	1	57	58	59	60	61	62	63	64
5	VDF EG	2	104	105	106	107	108	109	110	111
6	VDF KBD TR.	1	52	51	85.0-1	54	78.0/4	78.1/5	78.2/6	78.3/7
6	VDF KBD TR.	2	99	98	132.0-1	101	125.0/4	125.1/5	125.2/6	125.3/7
7	VDF VELOCITY	1	OSC	56	84	55	79.0/4	79.1/5	79.2/6	79.3/7
7	VDF VELOCITY	2	OSC	103	131	102	126.0/4	126.1/5	126.2/6	126.3/7

8	VDA EG	1	OSC	71	72	73	74	75	76	77
8	VDA EG	2	OSC	118	119	120	121	122	123	124
9	VDA KBD TR.	1	67	66	85.4-5	69	80.0/4	80.1/5	80.2/6	80.3/7
9	VDA KBD TR.	2	114	113	132.4-5	116	127.0/4	127.1/5	127.2/6	127.3/7
10	VDA VELOCITY	1	OSC	68	70	81.0/4	81.1/5	81.2/6	81.3/7	-
10	VDA VELOCITY	2	OSC	115	117	128.0/4	128.1/5	128.2/6	128.3/7	-
11	PITCH MG	1	OSC	41.0-2	45	42	43	44	41.7	46
11	PITCH MG	2	OSC	88.0-2	92	89	90	91	88	93
12	PMG CONTROL	1	OSC	48	47	49	-	-	-	-
12	PMG CONTROL	2	OSC	95	94	96	-	-	-	-
13	VDF MG	-	29.0-2	32	30	31	29.7	29.5-6	-	-
14	VDF MG/AFTT	-	39	35	36	-	-	-	-	-
15	CONTROLLER	-	37	33	38	34	-	-	-	-
16	EFFECT TYPE	-	135	137-138	136	139-140	-	-	-	-
17	FX PLACEMENT	-	143	141	142	-	-	-	-	-
18	FX1 PARAM.	-	144-151							
19	FX2 PARAM.	-	154-161							